

is placed on the movable stage and allowed to rest for five minutes until the lymph cells settle. The cells in a few adjacent rectangles can be readily counted by means of Leitz No. 5 or 6 objective. The number per unit of volume can be computed from the known depth of the cell and the size of the parallelograms.

The latter method is much more exact and convenient.

TOXIC SECRETIONS OF INFUSORIA

Woodruff (Jour. Exp. Zool., May, 1913) reaches the conclusion that *Paramecium* and some of the hypotrichous protozoa excrete substances that are toxic to, and tend to inhibit the rate of reproduction in their own species. These products are specific in their action since their presence does not uniformly influence the rate in a species other than that producing it.

It is apparent that this factor is necessarily one of importance in determining the continuance of cultures and the succession of organisms in them.

A few pedigreed specimens of *Paramecium* were placed in culture media, which differed only in that one had contained a rich culture of *paramecia* for several days, another had contained a similar culture of hypotrichs, and another had no protozoa. All the media had the same bacterial flora.

RELATIONS OF CELL SIZE AND NUCLEAR SIZE IN OXYTRICHA

Woodruff (Jour. Exp. Zool., July, 1913) finds that there is great variation both in the actual size of nuclei and cells and in the size of these in relation to one another in all the periods of the life of the race. That is to say there is no absolute or relative size which is characteristic of any age. The average size of the nucleus, and of the cell itself is *smallest*, and the proportion of nuclear to cytoplasmic matter is *highest* during the period of greatest reproductive activity. The author believes that the mass relations of nucleus and cytoplasm are not the determining features of reproduction.

INFLUENCE OF MATING IN PARAMECIA

Jennings and Lashley (Jour. Exp. Zool., April and Aug., 1913) find that the conjugation of *paramecia* has a distinct influence upon